

*Ice.*—At Green Spring, Ala., ice formed half inch thick mornings of 21st and 22d; Gainesville, Ga., ice three-sixteenths inch thick on fruit trees, &c., 19th; Point Pleasant, La., ice half inch thick 21st; Brookhaven, Miss., ice formed 21st and 22d; Spartanburg, S. C., ice formed 29th and 30th; Terrell, Texas, ground frozen half inch 29th; Belmont Farm, Texas, ice sufficiently thick to bear a man's weight 21st; Corsicana, Texas, ice formed 21st; North Palermo, N. Y., mill-pond ice fifteen inches thick the 6th; Malone, N. Y., pond ice twenty inches thick 7th.

*Height of Rivers.*—Upon chart No. III is printed a table giving the highest and lowest marks and the dates upon which they occurred. The Red river fell quite steadily from the 1st to the 11th, and rose almost continuously after that date. The Missouri, at Leavenworth, fell slowly until the 5th, after which it rose and fell through intervals of three or four days. The Mississippi, at Vicksburg, on the 31st, was within three inches of the highest given for the 1st and 4th; at Cairo, the "danger point" was reached on the 22d, and continued above afterwards; at Memphis, "danger point" reached on 30th; at Vicksburg, above "danger point" from 1st to 13th, below from 14th to 26th, and above from 27th to close of month. At Nashville, the Cumberland fell 2 feet 2 inches from 1st to 9th, rose 20 feet 2 inches by 21st, fell 8 feet 8 inches by 24th, reached highest 30th, and fell 3 feet next day. The lower Ohio rose quite steadily after the dates of the lowest water marks.

## WATER TEMPERATURES.

The maximum and minimum temperatures only are given in the table on chart No. II, for stations along the lakes, rivers and coasts. The least range,  $1^{\circ}$ , was recorded at Duluth, Detroit and Milwaukee; the greatest range,  $24^{\circ}$ , at Shreveport.

## ATMOSPHERIC ELECTRICITY.

*Auroras.*—Those of the 24th, 25th and 26th were very extensively observed. Displays were reported as seen on the 1st at Albany, N. Y., Davenport, Iowa; 12th, Monticello, Iowa, Rocky Run, Wis.; 13th, Florida, Mass., Stapleton, N. Y.; 14th, Frankfort, Mo.; 24th, Portland, Me., Waltham, Mass., North Argyle and Malone, N. Y., Woodstock, Vt., Mt. Washington, N. H.; 25th, Afton, Cresco, Noro Springs and Monticello, Iowa, Duluth and Minneapolis, Minn., Rocky Run, Utica, LeRoy and La Crosse, Wis.; 26th, Acton, Me., Lyndon, Evanston and Somonauk, Ill., Duluth, Minn., Afton, Cresco and Monticello, Iowa, Grand Haven and Adrian, Mich., Frankfort, Mo., Utica, Rocky Run, Embarrass, Milwaukee, La Crosse and LeRoy, Wis., Virginia City, Nev.; 27th, Stapleton, N. Y., Duluth, Minn.; 29th, Hutchinson and Breckenridge, Minn.; 30th, Stapleton and Malone, N. Y., Milwaukee, Wis., Breckenridge, Minn.; 31st, Stapleton, N. Y., Hillsboro', Ohio, Duluth, Minn.

*Thunder-storms.*—At two or more stations in Alabama, on the 12th, 15th and 19th; Arkansas, 11th and 15th; Connecticut, 15th and 29th; Georgia, 16th and 20th; Illinois, 5th and 10th; Indiana, 10th and 11th; Iowa, 5th and 10th; Kansas, 5th, 10th and 31st; Louisiana, 11th, 15th and 19th; Maryland, 15th and 28th; Massachusetts, 17th and 28th; Michigan, 10th; Mississippi, 10th; Nebraska, 5th and 10th; New Jersey, 13th, 16th and 28th; New York, 12th, 13th, 26th and 28th; North Carolina, 12th; Ohio, 10th, 11th and 16th; Pennsylvania, 12th, 13th, 16th and 28th; South Carolina, 11th and 12th; Tennessee, 11th; Texas, 5th, 14th, 15th and 19th; Virginia, 25th and 28th; Wisconsin, 10th.

## OPTICAL PHENOMENA.

*Mirage*, recorded as follows: At Ellinwood, Kan., 7th; Moorhead, Minn., 1st, 12th, 13th, 18th, 20th, 22d, 28th, 29th and 31st; Fort Lyon, Col., 18th; New London, Conn., 1st, 3d, 4th and 28th; Breckenridge, Minn., 18th, 30th and 31st; Mt. Washington, N. H., 11th.

*Solar Halos.*—1st, Cal., Iowa, Kan., Nev.; 2d, Conn., Dak., Iowa, Kan., Mich., Minn., Wis.; 3d, Iowa, Kan., Me., Minn., N. M., Wis.; 4th, Conn., Del., Ga., Ill., Ind., Ky., Me., Mass., Mich., N. H., N. J., N. Y., N. C., Ohio, Penn., Tenn., Wis., Va.; 5th, Iowa, Me., Mass., N. H., N. Y., Ohio; 6th, Me., Minn., Penn., Ohio, N. J.; 7th, Iowa, Me., N. C.; 8th, Neb., Ohio, Mich.; 9th, Mich., N. Y., Ohio, Wis.; 10th, Miss., Neb., Ohio; 11th, Cal., Dak., Ga., Iowa, Mich., Minn., Nev., N. Y., Va.; 12th, Kan., Neb.; 13th, Ill., Iowa, Kan., Tex., Wis.; 14th, Ind., Ky., M. T., Ohio, Tenn., Va.; 15th, Me., Vt.; 16th, Me., Mass., Nev., N. H., N. Y., N. C., Vt.; 17th, Minn., R. I.; 18th, Dak., Iowa, Kan., La., Minn., Miss., N. H.; 19th, Dak., Ill., Ind., Iowa, Ky., Mich., Minn., Neb., Nev., N. Y., N. C., Ohio, Wis., W. Va., Va.; 20th, Conn., Iowa, Kan., Me., Mass., Mo., Neb., N. H., N. Y., Vt.; 21st, Ind., Kan., N. Y., Oregon; 22d, Ill., Ind., Iowa, Ky., Ohio; 23d, Conn., Mass., Mich., Nev., N. H., N. J., N. Y., Ohio, Penn., Wis.; 24th, Kan., Mich., N. Y.; 25th, Me., Nev., Wis.; 26th, Cal.; 27th, Ill., Ind., Iowa, Mich., Minn., Nev., Ohio, Penn., Wis., W. Va., Va.; 28th, Conn., Iowa, Kan., Wis.; 29th, Ill., Wis.; 30th, Del., Iowa, Me., Neb., N. H., Ohio, Vt.; 31st, Neb.

*Lunar Halos.*—1st, Dak., Me., N. Y., Utah; 2d, Col., Ill., Iowa, Kan., Mo., Mich., Neb., N. H., N. M.;

3d, Ga., Ill., Iowa, Kan., Me., Mass., Mich., N. J., N. M., N. C., Or., Wis.; 4th, Conn., Col., Ill., Ga., Ky., Me., Mass., Mich., Neb., N. J., N. Y., N. C., Penn., S. C., Tenn., Va., Wis.; 5th, Ala., Conn., Ga., Ill.; Me., Mass., Mich., Neb., N. J., N. Y., N. C., Ohio, Penn., R. I.; 6th, Ala., Col., Dak., Del., Ill., Ga., Ind., Ky., Me., Mass., Mich., Minn., N. H., N. J., N. Y., N. C., Ohio, Penn., R. I., S. C., Tenn., Va.; 7th, Col., Ind., Iowa, Kan., Minn., Neb., N. H., N. J., N. Y., N. C., R. I., Tenn., Va.; 8th, Ala., Dak., Ill., Ind., Iowa, Me., Mass., Neb., Ohio, Tenn., Wis., W. Va.; 9th, Ala., Ill., Ind., La., Mass., Mich., Miss., N. J., N. Y., N. C., Ohio, Penn.; 10th, Dak., Ind., Neb., N. J., N. C., Ohio, Penn., Tenn., Va.; 11th, Ala., Ga., Iowa, N. Y., N. C.; 12th, Minn., N. C.; 15th, N. J.; 20th, Me.; 21st, Or.; 27th, Wis., Mo.; 29th, Neb., Wis., Ky.; 30th, Me., Neb., Vt., Va., N. C.; 31st, Cal., Dak., Ill., Ind., Iowa, Ky., Mich., Neb., Ohio, Or., R. I., N. C., Me.

## MISCELLANEOUS PHENOMENA.

*Polar bands* were observed at Gattenberg, Iowa, on the 9th and 23th; Carthagena, Ohio, 9th, 19th and 29th; Hanover, Penn., 14th; Wytheville, Va., 31, 4th, 8th, 9th, 14th and 19th; Plattsmouth, Neb., 2d; Dubuque, 29th; Smithville, N. C., 14th and 22d; Bismarck, D. T., 7th.

*Zoological*.—*Wild Geese* were seen at Gattenberg, Ia., 8th; flying N. at Independence, Ia., 8th and 10th; flying N. at Monticello, Ia., 9th; flying N. at Point Pleasant, La., 8th; flying N. at Standish, Me., 29th; flying N. at Owing's Mills, Md., 11th; flying E. at Mendon, Mass., 6th; seen at New Bedford, Mass., 28th; flying W. at Hudson, Mich., 19th; flying N. at Clear Creek, Neb., 24th; flying N. at Jacksonsburg, O., 3d; flying N. at Belmont Farm, Tex., 9th, 14th and 31st; flying N. at West Charlotte, Vt., 30th; flying N. at Prospect Hill, Va., 27th; flying NW. at Wytheville, Va., 9th; flying N. at Rocky Run, Wis., 10th, and S. 9th. *Wild Ducks* were seen flying N. at Golden, Col., 28th; flying N. at Monticello, Ia., 9th, and Independence, 10th; at Hudson, Mich., observed during month; flying N. at Clear Creek, Neb., 30th; arrived at Utica, Wis., 6th. *Robins* arrived at Riley, Ill., 7th; Afton, Ia., 8th; Independence, Ia., 5th; Gardiner, Me., 30th; Somerset, Mass., 16th; Dumbarton, N. H., 9th; Auburn, N. H., 26th; Ardenia, N. Y., 7th; Starkey, N. Y., 6th; Woodstock, Vt., 9th; Coalville, Utah, 17th; Wautoma, Wis., 19th; Utica, Wis., 10th. *Bluebirds* appeared at Riley, Ill., 8th; Standish, Me., 29th; Somerset, Mass., 7th; Dumbarton, N. H., 7th; Auburn, N. H., 12th; Starkey, N. Y., 7th; West Chester, Penn., 11th; Utica, Wis., 10th. *Blackbirds* first seen at Estes Park, Col., 7th; Somerset, Mass., 18th; Dumbarton, N. H., 9th; Chambersburg, Penn., 9th; Utica, Wis., 10th. *Mocking Birds*, arrived (during a snow storm,) at Louisville, Ill., 12th; Norfolk, Neb., 12th. *Purple Martin* appeared at Liconia, Ind., 28th. *Kill Dec* seen at Utica, Wis., 10th. *Larks* appeared at Riley, Ill., 8th; Emerson, Neb., 30th; Chambersburg, Penn., 9th. *Song Sparrow* arrived at Somerset, Mass., 5th. *Trout* were observed in the creeks at Golden, Col., 9th. At Somerset, Mass., *herring* were first caught in the Taunton river 7th, and *shad* 30th. *Grasshoppers* hatched out at Estes Park, Col., 3d; at Belmont Farm, Texas, they have remained alive all winter, and were on wheat the 25th; active at Bismarck, Dak., 4th.

*Botanical*.—*Peach trees* in full bloom at Knoxville, Tenn., 10th; Anna, Ill., 11th; in bloom at Benettsville, Ky., 7th; budding out at Ringgold, Ohio, 11th. *Apple trees* budding out at Ringgold, Ohio, 11th. *Plum trees* in bloom at Prospect Hill, Va., 8th. *Willow buds* opened at Springfield, Mass., 5th. *Elm trees* budding at Monticello, Ia., 31st. *Maple and Elder trees* budding at Owing's Mills, Md., 18th.

*Prairie Fires* occurred near Fort Lyon, Col., 7th, 18th, 21st and 29th.

*Zodiacal Light* was observed at Ellinwood Kan., 12th and 17th; Ateo, N. J., 19th, 22d and 23d; Waterburgh, N. Y., 14th, 15th, 19th, 22d, 23d and 24th.

*Earthquakes*.—Two slight shocks were felt about 6 a. m. and 1 p. m., of the 25th, at Oakland, Cal.

*Meteors* were seen on the 1st at Nora Springs, Ia., Beloit, Wis.; 6th and 9th, Freehold, N. J.; 10th, Florida, Mass.; 13th, Nora Springs and Davenport, Ia.; 14th, Pennville, Penn.; 19th, Flushing, N. Y.; 23d, Florida, Mass., Brookhaven, N. Y.; 26th, Benettsville, Ky., Smithville, N. C.

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Albert J. Meyer

Brig. Gen. (Bvt. Assg'l.) Chief Signal Officer, U. S. A.

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